

In re: Michael J. Collins et al.  
Serial No. 10/004,575  
Filed: December 4, 2001  
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Remarks

Applicants note with appreciation the Examiner's careful review of the pending application. In the October 23, 2002 Official Action, the Examiner has rejected certain of the claims under 35 U.S.C. § 112, and has rejected the claims under § 103.

The Rejections Under § 112:

First, in partial response to the Office Action, and in order to clarify and clearly present the issues under consideration, a number of the claims have been canceled. These include Claims 2, 3, 19, 20, 29 and 30. Applicants accordingly respectfully submit that the comments and rejections of these claims set forth in Paragraphs 4 and 7 of the Official Action are moot and need not be discussed in any further detail.

As requested by the Examiner, the typographical miss-numbering of Claim 18 has also been corrected.

In Paragraph 4 of the Office Action, the Examiner argues that Claims 8 and 22 should fail under § 112, "because drying the sample requires raising its temperature".

As a first point in response, Applicants respectfully submit that items will dry based on a number of factors, only one of which may be an increase in temperature. Other factors can come into play, including vapor pressure, relative humidity of the ambient, and the simple passage of time. Accordingly, Applicants respectfully submit that the Examiner should reconsider this point on a purely scientific basis.

As a second point of response, on page 8, at lines 2-5 of this particular application, Applicants make specific reference and incorporation of commonly assigned and copending application Serial No. 09/156,086, which is now issued as U.S. Patent No. 6,227,041. This patent clearly teaches a method of maintaining a sample at a constant temperature while the item is being dried by microwave radiation. As disclosed therein, if the temperature of the

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sample is monitored during the drying process, the accompanying application of microwaves can likewise be moderated to keep or maintain a desired temperature.

Accordingly, Applicants respectfully submit that based on the pending specification, the temperature-based objection to Claims 8 and 22 should be removed.

In Paragraph 5 of the Office Action, the Examiner argues that the specifications fails to enable the use of, "any other type of electromagnetic radiation," besides microwave. Fundamentally, Applicants agree with the Examiner's position, but respectfully point out that the claims have always included the recitation that the electromagnetic radiation is, "in the microwave frequencies." This recitation has been in the specification and claims since the original filing date of the parent, and does not represent new matter. Accordingly, Applicants have never made any representation that the drying is carried out by anything other than microwave radiation, and Applicants respectfully request the Examiner to reconsider and remove this grounds of rejection.

With respect to the rejection set forth in Paragraph 7 of the Official Action, Applicants again note that six of the claims referred to in Paragraph 7 have been canceled, and any discussion about them is now moot.

With respect to the last paragraph on page 3 of the rejection, Applicants agree that the use of the words, "on the sample pad," are preferable to, "and the sample pad," and this change has been made in Claims 10, 17, 24 and 40, as suggested by the Examiner.

With respect to the rejection of Claim 28 set forth on the top of page 4 of the Office Action, Applicants respectfully submit that Claim 35 is included to recite the steps to which the Examiner refers. In its broadest sense, the claimed invention does not require a re-weighing of the sample, although this is a preferable option. Nevertheless, if the sample is weighed, then dried, then subjected to the NMR analysis, the fat and oil content can be determined. In the invention, drying serves two purposes: (1) removing moisture to prevent its interference with the proton NMR step and (2) potentially – but not necessarily – determining the moisture content of the sample. Including the step of re-weighing the

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sample after drying is a method of additionally determining the moisture content of the sample. The invention encompasses both of these possibilities, either separately or together. Thus, Applicants submit that the steps that the Examiner refers to as omitted in Claim 28 are more properly presented in the dependent Claim 35 as presently pending.

### The § 103 Rejections:

From a substantive standpoint, the claims have also been rejected under § 103 combinations of Kock (GB 2 261 072) and Collins (US 4,554,132); or Kock and Collins and Jerosch-Herold (US 5,289,124).

In evaluating the prior art as applied to date, the Applicants note that the Kock reference discourages (teaches away from) the use of microwave for drying purposes prior to NMR analysis (page 2, lines 13-18 of the 072 application). Accordingly, Kock supports the non-obviousness of the invention rather than its obviousness.

Additionally, because Kock requires adding a drying agent to a sample prior to NMR analysis, Kock's method is functionally incompatible with the claimed method in which the sample is weighed and dried immediately prior to the NMR analysis. As set forth in the specification, the pulse relaxation measurements in the NMR analyzer are meaningless absent a knowledge of the weight of the sample that was being analyzed.

Furthermore, because the samples typically analyzed in the claimed method are often heterogeneous or non-uniform materials such as food products, the ability to obtain the moisture and fat and oil content from single samples, rather than combinations of multiple samples, offers a more accurate, faster, and thus advantageous method to the relevant industries.

The Collins '132 patent indeed demonstrates the moisture measurement capabilities of microwave instruments. Nevertheless, because Kock discourages the use of microwave instruments, any combinations of Kock with microwave instruments are logically incompatible with the pending claims.

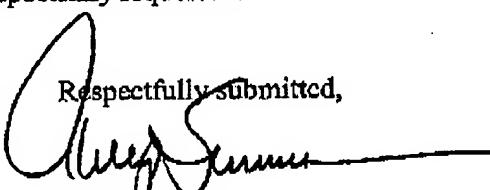
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Jerosch-Herold is cited as showing the use of a Teflon wrapper for the NMR sample. This disclosure adds nothing that cures the deficiencies of Kock with respect to the pending independent claims. Furthermore, Jerosch-Herold teaches NMR analysis of "porous media" saturated with a liquid (e.g. Abstract, Summary, and claim 1) and thus fails to disclose or suggest NMR analysis of dried materials.

Therefore, Applicant submits that all of the pending claims are in condition for immediate allowance and the same is respectfully requested.

Respectfully submitted,

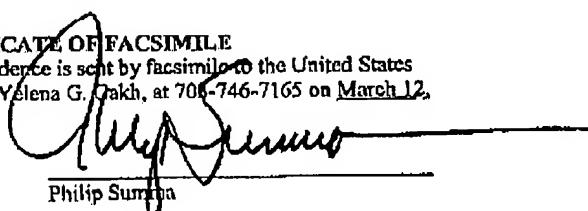
  
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### CERTIFICATE OF FACSIMILE

I hereby certify that this correspondence is sent by facsimile to the United States Patent and Trademark Office, c/o Examiner Yelena G. Oakh, at 703-746-7165 on March 12, 2003.

  
Philip Summa